

REMARKS

DOUBLE PATENTING

Claims 1, 3-22, 24, 26-35, 37-39, 41-51, 53, 55, 56 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7, 9-20 and 22-29 of Kennedy et al. (US Patent No.: 6956097). The Applicant respectfully disagrees and presents arguments related to such in the following sections.

Claims 1, 3-14, 16-22, 26, 28, 31-35, 37-39, 41-51, 53, 55 and 56 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of Kennedy et al. (US Publication No.: 200/0055000; US Issued Patent 7012125). The Applicant respectfully disagrees and presents arguments related to such in the following sections.

35 USC §112

Claims 2 (now canceled), 44, 46 and 48 are rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Applicant respectfully disagrees.

Claim 1 recites:

“An absorbing composition comprising at least one inorganic-based compound, at least one absorbing compound, and at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof.”

The language of the claim indicates that the material modification agent comprises at least one of the listed material modification agents or a combination of the at least one listed material modification agents. The “or” language indicates that not all of the listed material modification agents need to be present in the composition, and the specification supports this analysis. (*Please see MPEP Section 2173.05(h)*). Therefore, if an adhesion promoter is present as a material modification agent – there is at least one adhesion promoter present, but the “or” language means that if there is at least one adhesion promoter present as a material modification agent, there does not need to be at least one crosslinking agent, at least one porogen, at least one high-boiling solvent, at least one catalyst, at least one capping agent, at least one pH tuning agent present. In addition, there may be a combination of material modification agents present as shown by the “or a combination thereof” language. Therefore, there may be two adhesion promoters (at least one adhesion promoter) and one pH tuning agent (at least one pH tuning agent) and no other material modification agents present. This analysis stands for claims 44, 46 and 48 also.

The Applicant hopes that this clarification clears up the Examiner’s concerns and respectfully invites the Examiner to contact the undersigned attorney-of-record by phone to discuss if there is still a perceived issue with claims 2, 44, 46 and 48 (all now canceled).

35 USC §102

Claims 1, 3-14, 16-22, 26, 28, 31-35, 37-39, 41-51, 53, 55 and 56 are rejected under 35 USC §102(e) as being anticipated by US Patent 7012125 (Kennedy et al). The Applicant respectfully disagrees.

Claim 1 recites:

“An absorbing composition comprising at least one inorganic-based compound, at least one absorbing compound, and at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof.”

Claim 43 recites:

“A method of making an absorbing composition comprising:

combining at least one inorganic-based compound, at least one absorbing compound, at least one material modification agent, an acid/water mixture, and one or more solvents to form a reaction mixture, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof; and

allowing the reaction mixture to form the absorbing composition at room temperature.”

Claim 45 recites:

“A method of making an absorbing composition comprising:

combining at least one inorganic-based compound, at least one absorbing compound, at least one material modification agent, an acid/water mixture, and one or more solvents to form a

reaction mixture, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof; and heating the reaction mixture to form the absorbing composition.”

Claim 47 recites:

“A method of making an absorbing composition comprising:

combining at least one inorganic-based compound, at least one absorbing compound, at least one material modification agent, and one or more solvents to form a reaction mixture, wherein the at least one material modification agent comprises at least one acid and water, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof; and

heating the reaction mixture to form an absorbing material, a coating or a film.”

Claim 49 recites:

“A method of making an absorbing composition comprising:

combining at least one inorganic-based compound, at least one absorbing compound, at least one material modification agent, and one or more solvents to form a reaction mixture, wherein the at least one material modification agent comprises at least one acid and water, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof; and

allowing the reaction mixture to form an absorbing material, a coating or a film.”

Each of the above-stated independent claims contain the requirement of at least one material modification agent. The current application defines a material modification agent as:

“The at least one material modification agent may include any compound or composition that can modify the coating material to improve the photolithographic, compatibility and/or physical quality of the resulting film or layered material, such as by improving the etch selectivity and/or stripping selectivity, by minimizing the fill bias, by facilitating removal and/or by improving the stability or shelf life of the material/composition. The at least one material modification agent may comprise at least one adhesion promoter, at least one pH tuning agent, at least one porogen, at least one leveling agent, at least one high-boiling solvent, at least one crosslinking agent, at least one catalyst, at least one capping agent and/or combinations thereof. *Surprisingly, at least in some embodiments, the material modification agent (such as the at least one adhesion promoter) comprises a compound or composition that is conventionally viewed as a poisoning agent for lithography and thus avoided by the industry, but its use in the embodiments described herein improves the adhesion of the lithography composition without poisoning the composition.*”
(emphasis added)

This Kennedy reference does not disclose the use of material modification agents in any form. The Kennedy reference discusses the synthesis of several of the absorbing materials and compositions, but material modification agents do not appear to be added to the compositions once formed. The Examiner should specifically point out any material modification agents that are added to the compositions after formation in the Kennedy reference.

In addition, Kennedy does not teach all of the claimed elements of the present application. “Anticipation requires the disclosure in a single prior art reference of each element of the claim

under consideration.” *W. L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) (citing *Soundscriber Corp. v. United States*, 360 F.2d 954, 148 USPQ 298, 301 (Ct. Cl.), *adopted*, 149 USPQ 640 (Ct. Cl. 1966)) Further, the prior art reference must disclose each element of the claimed invention “**arranged as in the claim**”. *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)). Kennedy does not teach the addition of at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof. Second, Kennedy does not teach the addition of at least one material modification agent wherein at least one of those agents may conventionally considered a poisoning agent in the field of lithography. Based on this argument, along with others such as that discussed above, Kennedy does not anticipate claims 1, 43, 45, 47 or 49 of the present application because Kennedy does not teach, suggest or motivate one of ordinary skill in the art to include at least one specific feature or structural recitation found in the present application, and in claims 1, 43, 45, 47 or 49. Claims 1, 43, 45, 47 or 49 are therefore allowable as not being obvious in view of Kennedy. Further, Kennedy does not render obvious claims 3-14, 16-22, 26, 28, 31-35, 37-39, 41-42, 51, 53, 55 and 56 by virtue of their dependency on claims 1, 43, 45, 47 or 49.

Claims 1, 7, 11-13, 16-21, 26, 29-33, 41-42 are rejected under 35 USC §102(e) as being anticipated by US Patent 6677392 (Ravichandran et al). The Applicant respectfully disagrees.

Claim 1 recites:

“An absorbing composition comprising at least one inorganic-based compound, at least one absorbing compound, and at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof.”

Each of the above-stated independent claims contain the requirement of at least one material modification agent. The current application defines a material modification agent as:

“The at least one material modification agent may include any compound or composition that can modify the coating material to improve the photolithographic, compatibility and/or physical quality of the resulting film or layered material, such as by improving the etch selectivity and/or stripping selectivity, by minimizing the fill bias, by facilitating removal and/or by improving the stability or shelf life of the material/composition. The at least one material modification agent may comprise at least one adhesion promoter, at least one pH tuning agent, at least one porogen, at least one leveling agent, at least one high-boiling solvent, at least one crosslinking agent, at least one catalyst, at least one capping agent and/or combinations thereof. ***Surprisingly, at least in some embodiments, the material modification agent (such as the at least one adhesion promoter) comprises a compound or composition that is conventionally viewed as a poisoning agent for lithography and thus avoided by the industry, but its use in the embodiments described herein improves the adhesion of the lithography composition without poisoning the composition.***”

(emphasis added)

The Ravichandran reference does not disclose the addition of at least one material modification agent that comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof, especially those material modification agents that are conventionally viewed as a poisoning agent for lithography and thus avoided by the industry.

In addition, Ravichandran does not teach all of the claimed elements of the present application. “Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” *W. L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983) (citing *Soundsciber Corp. v. United States*, 360 F.2d 954, 148 USPQ 298, 301 (Ct. Cl.), *adopted*, 149 USPQ 640 (Ct. Cl. 1966)) Further, the prior art reference must disclose each element of the claimed invention “**arranged as in the claim**”. *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)(citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)).

Ravichandran does not teach the addition of at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof. Second, Ravichandran does not teach the addition of at least one material modification agent wherein at least one of those agents may conventionally considered a poisoning agent in the field of lithography. Based on this argument, along with others such as that discussed above, Ravichandran does not anticipate claim 1 of the present application because Ravichandran is lacking and/or missing at least one specific feature or structural recitation found in the present application, and in claim 1. Claim 1 is therefore allowable as not being anticipated by Ravichandran. Further, Ravichandran does not anticipate claims 7, 11-13, 16-21, 26, 29-33, 41-42 by virtue of their dependency on claim 1.

35 USC §103

Claims 1, 3-22, 24, 26-35, 37-39, 41-51, 53, 55, 56 are rejected under 35 USC §103(a) as being obvious over Kennedy et al. (US 6956097). The Applicant respectfully disagrees.

Claim 1 recites:

“An absorbing composition comprising at least one inorganic-based compound, at least one absorbing compound, and at least one material modification agent, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof.”

Claim 43 recites:

“A method of making an absorbing composition comprising:

combining at least one inorganic-based compound, at least one absorbing compound, at least one material modification agent, an acid/water mixture, and one or more solvents to form a reaction mixture, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof; and

allowing the reaction mixture to form the absorbing composition at room temperature.”

Claim 45 recites:

“A method of making an absorbing composition comprising:

combining at least one inorganic-based compound, at least one absorbing compound, at least one material modification agent, an acid/water mixture, and one or more solvents to form a reaction mixture, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst,

at least one capping agent, at least one pH tuning agent or a combination thereof; and
heating the reaction mixture to form the absorbing composition.”

Claim 47 recites:

“A method of making an absorbing composition comprising:

combining at least one inorganic-based compound, at least one absorbing compound, at least one material modification agent, and one or more solvents to form a reaction mixture, wherein the at least one material modification agent comprises at least one acid and water, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof; and

heating the reaction mixture to form an absorbing material, a coating or a film.”

Claim 49 recites:

“A method of making an absorbing composition comprising:

combining at least one inorganic-based compound, at least one absorbing compound, at least one material modification agent, and one or more solvents to form a reaction mixture, wherein the at least one material modification agent comprises at least one acid and water, wherein the at least one material modification agent comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof; and

allowing the reaction mixture to form an absorbing material, a coating or a film.”

Each of the above-stated independent claims contain the requirement of at least one material modification agent. The current application defines a material modification agent as:

“The at least one material modification agent may include any compound or composition that can modify the coating material to improve the photolithographic, compatibility and/or physical quality of the resulting film or layered material, such as by improving the etch selectivity and/or stripping selectivity, by minimizing the fill bias, by facilitating removal and/or by improving the stability or shelf life of the material/composition. The at least one material modification agent may comprise at least one adhesion promoter, at least one pH tuning agent, at least one porogen, at least one leveling agent, at least one high-boiling solvent, at least one crosslinking agent, at least one catalyst, at least one capping agent and/or combinations thereof. ***Surprisingly, at least in some embodiments, the material modification agent (such as the at least one adhesion promoter) comprises a compound or composition that is conventionally viewed as a poisoning agent for lithography and thus avoided by the industry, but its use in the embodiments described herein improves the adhesion of the lithography composition without poisoning the composition.***”
(emphasis added)

The Kennedy reference discloses the use of high-boiling solvents and surfactants in Column 7, lines 24-46, and in those instances, those solvents are considered to be those solvents that minimized bubble film defects, but there was no full understanding that the addition of high boiling solvents could improve photolithographic or compatibility of the resulting film, including the etch selectivity and/or stripping selectivity or by minimizing the fill bias. In addition, the Kennedy reference mentions that surfactants can be added, but there’s no description as to how they may help or hurt the resulting films. The Kennedy reference does not disclose the addition of at least one material modification agent that comprises at least one adhesion promoter, at least one crosslinking agent, at least one porogen, at least one catalyst, at least one capping agent, at least one pH tuning agent or a combination thereof, especially those material modification agents that are conventionally viewed as a poisoning agent for lithography and thus avoided by the industry. Based on this

argument, along with others such as that discussed above, Kennedy does not render obvious claims 1, 43, 45, 47 or 49 of the present application because Kennedy does not teach, suggest or motivate one of ordinary skill in the art to include at least one specific feature or structural recitation found in the present application, and in claims 1, 43, 45, 47 or 49. Claims 1, 43, 45, 47 or 49 are therefore allowable as not being obvious in view of Kennedy. Further, Kennedy does not render obvious claims 3-22, 24, 26-35, 37-39, 41-42, 51, 53, 55 and 56 by virtue of their dependency on claims 1, 43, 45, 47 or 49.

REQUEST FOR ALLOWANCE

Claims 1, 3-43, 45, 47, 49, 51, 53, and 55-58 are pending in this application. The applicants request allowance of all pending claims.

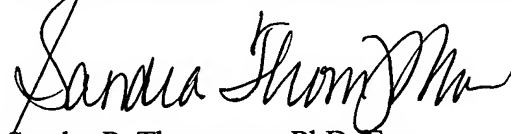
Dated: _____

8/29/2006

Respectfully submitted,

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